Geophysical Research Abstracts, Vol. 7, 03284, 2005
SRef-ID: 1607-7962/gra/EGU05-A-03284

Optical properties of aerosol in Thessaloniki, Greece

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Measurements of aerosol optical properties (aerosol optical depth, Ångstrom exponent) have been conducted almost continuously between June 2003 and December 2004 with a CIMEL sunphotometer as part of AERONET at Thessaloniki, Greece (40.5N,22.97E). The above measurements were carried out simultaneously with the determination of SO_2 total columnar amount from a Brewer spectrophotometer, mass PM10 concentrations, in site relative humidity and temperature. AOD measurements were recorded at 6 wavelengths (440, 530, 670, 870, 940, 1020nm). Values of AOD at 440nm range typically between 0.3 and 0.45 in September and are going up to 1 in specific cases like 8 and 26 September, while the corresponding mean Ångstrom exponent is 1.5 going up to 2 in June 2003 and September 2003. During this month the CIMEL aerosol measurements were examined together with Brewer columnar SO_2, T, RH , satellite imagery and back trajectories in order to establish the role of local sources and long-range transport of biomass burning and industrial plumes on the measured aerosol optical properties.